

CLAIMS

What is claimed is:

1. An implantable system for treating a body lumen having a lumen wall comprising:
 - (a) an outer balloon-expandable stent comprising a first end, a second end, a surface, and a lumen; and
 - (b) at least one inner self-expanding stent comprising a first end, a second end, and a surface;

wherein the inner stent is capable of being deployed so that:

at least a portion of the inner stent is disposed within the lumen of the outer stent; and
the first end of the inner stent is disposed outside the lumen of the outer stent.

2. The system of claim 1 wherein the second end of the inner stent is disposed outside the lumen of the outer stent.
3. The system of claim 1 wherein the outer stent is capable of exerting a radial force against the body lumen wall that is greater than the radial force that the inner stent is capable of exerting against the body lumen wall.
4. The system of claim 1 wherein the inner stent further comprises a coating comprising a biologically active material disposed on at least a part of the surface of the inner stent.
5. The system of claim 4 wherein the coating is disposed proximate the first end of the inner stent.
6. The system of claim 4 wherein the coating is disposed proximate the first end of the inner stent and proximate the second end of the inner stent.
7. The system of claim 4 wherein the surface of the inner stent is an outer surface.
8. The system of claim 4 wherein the coating further comprises a polymeric material.
9. The system of claim 4 wherein the biologically active material comprises paclitaxel and the coating further comprises a polymeric material.
10. The system of claim 1 wherein the outer stent further comprises a coating comprising a biologically active material disposed on at least a part of the surface of the outer stent.
11. The system of claim 10 wherein the coating further comprises a polymeric material.

12. The system of claim 11 wherein the biologically active material comprises paclitaxel.

13. An implantable system for treating a body lumen having a lumen wall comprising:

- (a) an outer balloon-expandable stent comprising a first end, a second end, a surface, and a lumen; and
- (b) an inner self-expanding stent comprising a first end, a second end, and a surface;

wherein:

the inner stent is capable of being deployed so that at least a portion of the inner stent is disposed within the lumen of the outer stent; and the first and second ends of the inner stent are disposed outside of the lumen of the outer stent;

the inner stent comprises a first coating comprising a first biologically active material disposed on a first part of the surface of the inner stent that is proximate the first end of the inner stent and on a second part of the surface of the inner stent that is proximate the second end of the inner stent; and

the outer stent comprises a second coating comprising a second biologically active material disposed on at least a part of the surface of the outer stent.

14. An implantable system for treating a body lumen having a lumen wall comprising:

- (a) an outer balloon-expandable stent comprising a first end, a second end, a surface, and a lumen; and
- (b) a first self-expanding inner stent comprising a first end, a second end, and a surface;

wherein the first inner stent is capable of being deployed so that the first end of the first inner stent is disposed outside of the lumen of the outer stent and the second end of the first inner stent is disposed within the lumen of the outer stent.

15. The system of claim 14 further comprising a second inner self-expanding stent comprising a first end, a second end, and a surface;

wherein the second inner stent is capable of being deployed so that the first end of the second inner stent is disposed outside of the lumen of the outer stent and the second end of the second inner stent is disposed within the lumen of the outer stent.

16. The system of claim 15 wherein the outer stent is capable of exerting a radial force against the body lumen wall that is greater than the radial force that the first or second inner stent is capable of exerting against the body lumen wall.

17. The system of claim 14 wherein the first inner stent comprises a first coating comprising a first biologically active material disposed on at least a part of the surface of the first inner stent.

18. The system of claim 17 wherein the coating is proximate the first end of the first inner stent.

19. The system of claim 17 wherein the second inner stent comprises a second coating comprising a second biologically active material disposed on at least a part of the surface of the second inner stent.

20. The system of claim 19 wherein the second coating is disposed on a part of the surface of the second inner stent that is proximate the first end of the second inner stent.

21. The system of claim 19 wherein at least one of the first coating or second coating further comprises a polymeric material.

22. The system of claim 19 wherein at least one of the first biologically active material or the second biologically active material comprises paclitaxel.

23. The system of claim 15 wherein the outer stent comprises a third coating comprising a third biologically active material disposed on at least a part of the surface of the outer stent.

24. The system of claim 23 wherein the third coating further comprises a polymeric material.

25. The system of claim 24 wherein the third biologically active material comprises paclitaxel.

26. The system of claim 19, wherein the first coating is disposed on the outer surface of the first inner stent and the second coating is disposed on the outer surface of the second inner stent.

27. An implantable system for treating a body lumen having a lumen wall comprising:

- (a) an outer balloon-expandable stent comprising a first end, a second end, a surface, and a lumen;

- (b) a first inner self-expanding stent comprising a first end, a second end, and a surface; and
- (c) a second inner self-expanding stent comprising a first end, a second end, and a surface;

wherein:

the first inner stent is capable of being deployed so that the first end of the first inner stent is disposed outside of the lumen of the outer stent and the second end of the first inner stent is disposed within the lumen of the outer stent;

the second inner stent is capable of being deployed so that the first end of the second inner stent is disposed outside of the lumen of the outer stent and the second end of the second inner stent is disposed within the lumen of the outer stent;

the first inner stent comprises a first coating comprising a first biologically active material disposed on at least a part of the surface of the first inner stent proximate the first end of the first inner stent;

the second inner stent comprises a second coating comprising a second biologically active material disposed on at least a part of the surface of the second inner stent proximate the first end of the second inner stent; and

the outer stent comprises a third coating comprising a third biologically active material disposed on at least a part of the surface of the outer stent.

28. A stent comprising:

- (a) a balloon-expandable portion having a first end and a second end; and
- (b) a first self-expanding portion having a first end and a second end, wherein the first end of the balloon-expandable portion is connected to the first end of the first self-expanding portion.

29. The stent of claim 28 further comprising a second self-expanding portion having a first end and a second end, wherein the second end of the balloon-expandable portion is connected to the first end of second self-expanding portion

30. The stent of claim 28 wherein the balloon-expandable portion is capable of exerting a radial expansion force against the body lumen wall that is greater than the radial expansion force that the self-expanding portion is capable of exerting against the body lumen wall.

31. The stent of claim 28 wherein the first self-expanding portion comprises a plurality of wires.
32. The stent of claim 32 wherein the first end of the balloon-expandable portion is connected to the first end of the first self-expanding portion by weaving the plurality of wires with the first end of the balloon-expandable portion.
33. The stent of claim 32 wherein the plurality of wires comprises a superelastic material.
34. The stent of claim 28 wherein the first self-expanding portion further comprises a surface and a coating comprising a biologically active material disposed on at least a part of the surface.
35. The stent of claim 34 wherein the coating is disposed on a part of the surface that is proximate the second end of the first self-expanding portion.
36. The stent of claim 34 wherein the coating further comprises a polymeric material.
37. The stent of claim 34 wherein the biologically active material comprises paclitaxel.
38. The system of claim 28 wherein the balloon-expandable portion further comprises a surface and a coating comprising a biologically active material disposed on at least a part of the surface.
39. The system of claim 38 wherein the coating further comprises a polymeric material.
40. The system of claim 39 wherein the biologically active material comprises paclitaxel.
41. A stent comprising:
 - (a) a balloon-expandable portion having a first end and a second end;
 - (b) a first self-expanding portion having a first end and a second end, wherein the first end of the balloon-expandable portion is connected to the first end of the first self-expanding portion; and
 - (c) a second self-expanding portion having a first end and a second end, wherein the second end of the balloon-expandable portion is connected to the first end of second self-expanding portion;

wherein:

the first self-expanding portion comprises a surface and a first coating comprising a first biologically active material disposed on at least a part of the surface of the first self-expanding portion;

the second self-expanding portion comprises a surface and a second coating comprising a second biologically active material disposed on at least a part of the surface of the second self-expanding portion; and

the balloon-expandable portion comprises a surface and a third coating comprising a third biologically active material disposed on at least a part of the surface of the balloon-expandable portion.